

# Appraising the Nature of Solid Waste in the Locality

INTEGRATED SOLID WASTE MANAGEMENT

Notes 2

Environmental Management



*A solid waste appraisal activity provides information needed to prepare a waste management program responsive to the unique needs of the community.*

## Good Appraisal Means More Responsive Programs

The Local Government Code mandates local governments to develop integrated solid waste management (ISWM) programs. Before a waste management program can be designed, an appraisal of waste generated by the community has to be done. This activity will provide important information that will help formulate an appropriate waste management program responsive to particular needs of the community.

Primarily, solid waste appraisal will give information on the nature and composition of waste from each sector of the community. It will help the local government formulate a program sensitive to varying needs of each zone such as residential and commercial districts. It will help differentiate waste management requirements between residential zones and industrial zones where factories generate various kinds of waste. A properly done waste appraisal will also help determine how much of each type of waste there is. This information will help the community identify and evaluate available waste management choices and select the most beneficial option.

Local governments can organize multi-sectoral working groups to conduct waste appraisal, following specific procedures and formula.

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## Technology

### Pointers for Conducting Solid Waste Appraisal

Waste appraisal is done before the consensus building and program-planning workshop. (Consensus building is discussed at length in *Local Governance Technical Notes on Integrated Solid Waste Management Notes 3, Organizing Joint Action on Integrated Solid Waste Management*.) The necessary steps in waste appraisal are simple and can be completed by a local team in one to two days.

- A Solid Waste Appraisal Team can be organized involving concerned local government departments and volunteer civic groups.

- With the help of a resource person, the Team can review guidelines and procedures, get materials needed for identifying and characterizing solid waste in the community, characterize samples, and analyze data.

- If there is a temporary depot where waste is collected (e.g., solid waste pile in a public market), the Team could get a representative sample from the pile to weigh and characterize. Results are entered in Tables 1 and 2 below. The Team must observe and document the waste management practices of people from each source of solid waste and include this

information in the overall appraisal.

- Samples from identified sources can also be taken at the disposal facility from deliveries of collection trucks. Appraisal activity can be coordinated with the person in-charge of the local garbage collection unit. The Team should know the waste collection schedule and which trucks are assigned to specific sources.

- Collected data from sampling and observations is consolidated, discussed, and packaged in a roundtable meeting of the Solid Waste Appraisal Team.

### Getting Samples and Needed Materials

The team doing waste appraisal has to get samples and materials from a waste source. Before the actual appraisal activity, the following equipment must be prepared: hand trowels, masks, and gloves for each member of the team; a 20-liter container; and a weighing scale. For each identified source of waste (e.g., residential subdivision, market), the team may prepare Tables 1 and 2 as shown here.

1. From a known source of solid waste, e.g., residential subdivision, public market, or commercial business district, take random samples from around a waste pile using a hand trowel. Put these into a 20-liter container.

2. When the container is full, weigh the collected samples including the container.

3. Segregate the biodegradable from the non-biodegradable waste and weigh separately. Enter the data in Table 1 as shown here.

4. Segregate the non-biodegradable waste further into waste to be recycled and waste to be discarded.

5. Weigh each component, e.g., paper, plastic, rubber, etc., and enter data and computation results in Table 2.

**Table 1: Proportion of biodegradable and non-biodegradable solid waste from (cite source).**

Components	Weight (kg)	% Composition by Weight
Biodegradable		
Non-biodegradable		
<b>Total Weight of Sample</b>		

$$\% \text{ Composition of biodegradable waste} = \frac{\text{Weight of biodegradable wastes}}{\text{Total weight of sample}} \times 100$$

$$\% \text{ Composition of non-biodegradable waste} = 100 - (\% \text{ Composition of biodegradable waste})$$

**Table 2: Further characterization of non-biodegradable waste**

Components	Weight (kg)	% Composition by Weight
Paper, cartons		
Plastic, cellophane		
Metals		
Glass, bottles		
Textiles		
Rubber		
Tin/aluminum cans		
Others		
<b>TOTAL</b>		

Total weight should be equal to the non-biodegradable weight in Table 1.

$$\% \text{ Composition of (component, e.g., paper)} = \frac{(\text{Weight of component, e.g., paper})}{(\text{Total weight of non-biodegradable waste})} \times 100$$



## Policy and Practice

### Enabling Framework

Republic Act No. 7160 also known as the “Local Government Code of the Philippines” mandates local government units to enforce sanitation laws and prepare a solid waste management program. Section 3, article I encourages the participation of private sector in local governance.

Presidential Decrees 552, 825, 856, and 984 provide rules and penalties covering sanitation and disposal.

The Implementing Rules and Regulations for Chapter XVII of

Presidential Decree 858 (Code on Sanitation, Chapter on Refuse Disposal) provide specific guidelines for integrated solid waste management. The IRR document defines the scope of segregation, recycling, and collection activities to support segregation.

Memorandum Circular No. 39-A of January 19, 1988 from the Office of the President enjoins local governments to establish integrated solid waste management systems that include: management of waste generation; han-

dling and on-site storage; collection, transfer, and transport; processing and recovery; and disposal.

The [Department of Agriculture \(DA\)](#) and the [Department of Science and Technology \(DOST\)](#) encourage cooperatives, private entrepreneurs, and nongovernmental organizations (NGOs) to engage in commercial-scale composting using beneficial micro-organisms that accelerate the composting process.

### Practices That Are Working

In Naga City, the Mayor signed an executive order creating the technical working group (TWG) on solid waste management. This group conducted a waste appraisal in coordination with the solid waste collection unit of the city. The input of this exercise was necessary for the multi-sectoral strategic planning workshop.

Members of the TWG visited various sources of solid waste-residential areas, wet markets, the commercial business district, and other sites and observed how waste was handled, whether it was segregated or not. They got samples from dump trucks coming from each source and characterized the waste samples. The data and all other information the group collected was consolidated in a roundtable discussion and packaged as input for the multi-sectoral planning workshop.

The generated information became a crucial part of the formulation of their ISWM plan.

Based on findings that 60 to 70 percent of waste was biodegradable, participants recommended that composting efforts be strengthened and intensified. Information on reusable and recyclable waste from commercial establishments also

inspired existing women’s groups to segregate waste at source. Results of the waste appraisal activity validated Naga City’s desire to promote composting and recycling as key components of its solid waste management program.



*Information from the solid waste appraisal activity of the technical working group is necessary input in the ISWM multi-sectoral strategic planning workshops of Naga City.*



## LGU Action Agenda

### Other Initiatives

In **Kiamba, Sarangani**, waste appraisal was a major factor in shaping Integrated Solid Waste Management Program of the local government. Learn from their experience by inviting their Municipal Environ-

ment and Natural Resources Office to share information. You may write to the MENRO, Kiamba, Sarangani.

**Dumguete City and Maitum, Sarangani** also used waste appraisal to formulate their integrated

solid waste management programs. Appraisal has helped them select appropriate solid waste management options that respond to the unique needs of their communities.



*In the Municipality of Kiamba, Sarangani, information from waste appraisal contributed to the formulation of the integrated solid waste management program of the local government.*

#### What You Can Do

- Review your present solid waste management program. Was your program designed with input from an exercise assessing waste generation and classifying waste from various sources?
- Get information on how to do solid waste appraisal. You may consult a resource person or a local government that has done this.
- Conduct a waste appraisal before holding a multi-sectoral strategic planning workshop on integrated solid waste management.

### Resources and References

As you start your solid waste management program by doing waste appraisal, the experience of those who have already done it will be helpful. You may get in touch with some of these local governments.

- **City Environment and Natural Resources Office (CENRO)**, Naga City, Tel. (054) 473-1479 c/o Mr. Oscar Orozco
- **Office of the Municipal Agriculturist (MAO)**, Maitum, Sarangani c/o Mr. Fabian Duhaylungsod
- **City Planning and Development Office (CPDO)**, Dumaguete City, Tel. (035) 225-0386 c/o Engr. Josephine Antonio

You may contact these offices if you need additional information:

- **Presidential Task Force on Waste Management (PTFWM)**, [Department of Environment and Natural Resources–Environmental Management Bureau \(DENR-EMB\)](#), Tel. (02) 426-2524
- **Regional and Provincial Offices**, DENR

If you're looking for more ideas, get a copy of these publications:

*Solid Waste Management for Local Governments*. 2<sup>nd</sup> Ed. DENR-Environmental Management Bureau. Manila: 1998.

*Integrated Solid Waste Management Sourcebook*. ARD, Inc.–Governance and Local Democracy (GOLD) Project.